

In the Claims:

1. A method of forming a larger/taller solder bump on a tight pitch connection product limited by the pitch of the connection pads comprising the steps of:

forming an elongated plated solder mushroom with a variable cross section so the minor dimension of the mushroom is in the direction of the connection pad pitch and the major dimension is orthogonal to the minor dimension is greater than the pitch allowing a greater volume of solder to be plated and

reflowing said elongated mushroom with variable cross-section to provide a larger diameter/taller solder bump within the pitch of the connection pads than with a circular mushroom.

2. The method of Claim 1 including the step of forming a stem of copper before forming a plated solder mushroom.
3. The method of Claim 2 wherein said stem is circular.
4. The method of Claim 3 wherein said elongated plated mushroom is elliptical.
5. The method of Claim 1 wherein said elongated plated mushroom is elliptical
6. A method of forming a larger diameter/taller solder bump on a tight pitch connection product limited by the pitch of the connection pads comprising the steps of:

forming a well in photoresist by photolithography for a circular stud and for an elongated plated solder mushroom with a variable cross section so the minor dimension of the mushroom is in the direction of the connection pad pitch and the major dimension is orthogonal the minor dimension,

electroplating an elongated mushroom in said well,

removing said photoresist, and

reflowing the elongated mushroom to provide a larger diameter/taller solder ball within the pitch of the connection pads than with a circular mushroom.

7. The method of claim 6 including the step of forming said circular stud.

8. The method of Claim 7 wherein said circular stud is copper.

9. The method of Claim 6 wherein said elongated mushroom is elliptical.

10. An improved mushrooms for bumping of a semiconductor product having a series closely space connections comprising:

a stem extending from the closely spaced connections on the semiconductor product; and

an elongated mushroom extending from said stem;

said elongated mushroom having a short axis in the direction of adjacent connection mushrooms to be bumped and a long axis orthogonal to the short axis to increase the volume of solder to be reflowed and produce a larger diameter/taller solder ball than with a circular mushroom.